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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/560,622

12/14/2005

Kenichi Mori

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EXAMINER

PATHAK, SUDHANSHU C

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

11/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,622	Applicant(s) MORI ET AL.	
	Examiner SUDHANSHU C. PATHAK	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-24 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/23/2006 & 12/14/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-24 are pending in the application.

Response to Amendment

2. Applicant's arguments, filed in Preliminary Amendment dated 12/14/2005, with respect to the Specification, Claims & Drawings have been fully considered and have been accepted. The examination of the application was based on the Claims as amended in the above mentioned Preliminary Amendment.

Drawings

3. Figures 20-22 should be designated by a legend such as "Prior Art" since only that which is known is illustrated. Appropriate Correction is required.

Claim Objections

4. Claims 1, 9, 14 & 19 are objected to for failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not clear from the specification as to how the wireless communications devices comprising different receiving bands but same sampling frequency so as to undersample the downconverted signal would avoid aliasing due to not sampling at the Nyquist Criteria.

Appropriate Correction is required.

Allowable Subject Matter

5. Claims 1-20 are allowable over the prior art of record since the cited references do not contain the specified limitation of a wireless communications system for transmitting/receiving a first wireless signal from a first wireless communications device and a second wireless signal from a second wireless communications device, the first and second wireless signals having different frequency bands from each other, wherein: the first wireless communications device includes: a first frequency converter operable to downconvert the second wireless signal transmitted from the second wireless communications device to a first low-frequency signal; a first sampler operable to oversample the first low-frequency signal downconverted by the first frequency converter; and a first demodulation digital circuit operable to demodulate the signal oversampled by the first sampler; the signal demodulated by the first demodulation digital circuit has a center frequency of f_i [Hz]; the second wireless communications device includes: a second frequency converter operable to downconvert the first wireless signal transmitted from the first wireless communications device to a second low-frequency signal whose center frequency f_d [Hz] is equal to a difference between a center frequency of the first wireless signal and that of the second wireless signal; a second sampler operable to undersample the second low-frequency signal downconverted by the second frequency converter; and a second demodulation digital circuit operable to demodulate the signal undersampled by the second sampler; a sampling frequency used in the first sampler and that

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used in the second sampler are the same sampling frequency f_s [Hz]; the sampling frequency f_s [Hz] is set to a value that is an even-number multiple of a wireless symbol transmission rate such that oversampling is done in the first sampler and undersampling is done in the second sampler; and the center frequency f_i [Hz] is $1/2$ to 1 times a frequency corresponding to a bandwidth of the first and second wireless signals and is $1/2^N$ (N is a natural number) times the sampling frequency f_s [Hz].

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
7. This application is in condition for allowance except for the following formal matters: as disclosed above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUDHANSHU C. PATHAK whose telephone number is (571)272-5509. The examiner can normally be reached on 9am-5pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on 571-272-3042.

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The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sudhanshu C Pathak/
Primary Examiner, Art Unit 2611